

## Message

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**From:** Cournoyer, Patrick [Patrick.Cournoyer@fda.hhs.gov]  
**Sent:** 2/9/2018 6:14:28 PM  
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**Subject:** GE News & Science

## NEWS

### **Agri-Pulse reports in detail on the regulatory status of genome editing in the US**

- Most genome edited products have not been regulated by USDA, but APHIS notes that determinations are case-dependent
- The reporting describes stakeholders' criticisms of APHIS' part 340 revision and prospects for future efforts
- Although the new Administration has said it expects OSTP to provide interagency coordination and leadership, OSTP still lacks a director
- Commodity traders are worried about regulatory disharmony between countries with genome edited crops
- The article cites critiques of FDA's current thinking on the regulation of site-specific genome modifications in animals as animal drugs
- The article gives a summary of other countries' positions on genome editing, citing information from USDA's Foreign Agriculture Service

*Agri-Pulse:* [Will new regulations stifle innovation in plant and animal breeding?](#)

### **China canceling orders for US corn in favor of Ukrainian suppliers over concerns about GE safety certificates**

- China announced last week tougher penalties for purchasing cargoes without obtaining safety certificates related to GE content
- "Sources said it had become tougher for Chinese grain mills to get permits to process genetically modified corn this year"
- One source said it knew of \$40M of orders that were cancelled

*Reuters:* [China traders cancel U.S. corn cargoes on tighter GMO controls, buy from Ukraine: sources](#)

### **Oxitec developing mini-production facilities for decentralized raising and release of GE mosquitoes in Brazil**

- The 40 foot, modular labs will allow Oxitec to more nimbly scale up and scale down production as needed and reach areas farther from its main production facility
- Oxitec has plans to expand beyond its initial presence in Piracicaba, Brazil

*STAT:* [The future of genetically modified mosquitoes could be in mini, moveable labs](#)

### **International organic agriculture umbrella organization releases position paper rejecting new breeding methods**

- “Techniques such as Oligonucleotide directed mutagenesis (ODM), Zinc finger nuclease technology, CRISPR/Cas, Meganucleases, Cisgenesis, Grafting on a transgene rootstock, Agro-infiltration, RNA-dependent DNA methylation (RdDM), Reverse Breeding, Synthetic Genomics, are genetic engineering techniques that are not compatible with organic farming and that must not be used in organic breeding or organic production.”
- The position paper was released by the International Federation of Organic Agricultural Movements (IFOAM)

*IFOAM:* [Position Paper: Compatibility of Breeding Techniques in Organic Systems](#)

### **Golden Rice enters “varietal release stage” in Bangladesh**

- Two years of confined field trials are complete, and the project is entering the final stage, which entails another year of multi-location field trials and seeking regulatory approval
- The event has been bred into the BRRI dhan29 background for Bangladesh

*United News of Bangladesh:* [Wait nearly over for Golden Rice release in Bangladesh](#)

### **Activists allege food products in India contain unapproved GE ingredients**

- According to the article, no GE food crops are approved for consumption in India besides soybean oil
- The GM free coalition claims that USDA public records show that India imports US soybeans
- Activists allege farmers have planted imported GE soybeans from the US

*Times of India:* [India 'illegally' importing genetically modified soya seeds, allege farmers and food activists](#)

### **Nature Biotechnology features DIY gene therapy**

- FDA released a statement on November 21<sup>st</sup> saying DIY gene therapy products are against the law
- George Church is an advisor to a company selling a product that someone self-administered to mutate a gene that limits muscle growth
- The article cites several opinions on where FDA should draw the line between regulated drugs and self-experimentation

*Nature Biotechnology:* [FDA warns public of dangers of DIY gene therapy](#)

### **Scientists using CRISPR in cacao to confer resistance to *Cacao swollen shoot virus***

- The virus is becoming more prevalent with climate change
- The article corrects misreporting from earlier in 2018 that said cacao was on the brink of extinction

*NBC:* [These scientists are on a mission to save chocolate](#)

### **UC Davis researcher developing GE yeast that produces the flavor compounds normally found in hops**

- The researcher hopes doing this will decrease beer’s environmental footprint by eliminating the need for hops

*KQED:* [Would You Drink Beer Made With GMO Yeast To Conserve Water?](#)

### **European food manufacturers have shown interest in GE, high-oleic soybean oil**

- DowDuPont’s Plenish high-oleic soybean was granted EU import approval in December 2017
- A consultant told *Food Navigator* that EU companies are interested in high-oleic soybean oil, despite GMO labeling requirements

*Food Navigator:* [GM labelling will be no barrier to Plenish soybean oil uptake, says trade group](#)

### **Futurism reports on “food myths,” saying GMOs aren’t actually bad**

- Two of the four myths were that GMOs are bad for your health and for the environment

*Futurism: Is Organic Really Better? 4 Food Myths Debunked By Science*

## COMMENTARY

### **Academics and staff of IFPRI and OECD call for a “rethink” of biotech crop authorization in developing countries**

- They say that biotech crop adoption is at an “impasse” and that “slight and poorly quantified” risks have a greater impact than “overwhelming evidence of these products’ substantial benefits”
- The authors challenge the incorporation of socioeconomic considerations, saying that it is “neither structured nor evidence-based”
- They caution against quick-fix biosafety training for developing countries that result in strict adoption of the Cartagena protocol and precautionary approaches
- “Risk-assessment models in developing countries would be better focused on local agricultural and environmental practices, rather than being based on a Western model.”
- “A rigorous and transparent methodology that captures the concerns of both pro- and anti-GM groups and considers both science-based and non-science based evidence (as opposed to opinions) could be a way forward.”

*Nature Biotechnology: Rationalizing governance of genetically modified products in developing countries*

### **German regulators argue that existing GMO laws in Europe adequately regulate gene drives**

- The authors, from the German Federal Office of Consumer Protection and Food Safety, disagree with a *Nature* opinion that gene drives are unregulated

*Nature: Existing rules cover gene-drive applications*

## SCIENCE

### **New citrus phylogeny identifies ten wild, progenitor species and unravels the parentage of domesticated citrus varieties**

- The analysis shows that most domesticated citrus fruits are hybrids between citrons, pomelos, and mandarins, with varying degrees of contribution from each of the three parents
- The work suggests a center of origin near northeastern India, northern Myanmar, and northwestern Yunnan

*Nature: Genomics of the origin and evolution of Citrus*

### **Parasitic plants called dodders use miRNAs to silence host genes**

- Silencing the targeted genes would enhance virulence, because plants with mutations at the targets support enhanced infection

*Nature: MicroRNAs from the parasitic plant *Cuscuta campestris* target host messenger RNAs*

*Futurity: This parasitic plant hijacks its victim’s genes*

### **Rice expressing phytochrome-interacting factor 1 (PIF1) from corn has increased yield and drought tolerance**

- Field trials over multiple years confirmed an increase in yield relative to wild type, likely driven by an increase in tiller number

*Plant Biotechnology Journal: A Maize phytochrome-interacting factors Protein ZmPIF1 Enhances Drought Tolerance by Inducing Stomatal Closure and Improves Grain Yield in *Oryza sativa**

### **ISAAA publishes peer-reviewed, scientific report of 2016 biotech crop planting data**

- GE crop acreage increased 3% in 2016 over the previous year

*GM Crops & Food: Biotech crop planting resumes high adoption in 2016*

### **German consumers are more accepting of non-food uses of GE plants**

*International Journal of Consumer Studies: Debunking the myth of general consumer rejection of green genetic engineering: Empirical evidence from Germany*

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